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Scenery Specialist Report

Medicine Bow LaVA Project

Medicine Bow National Forest

Albany and Carbon Counties, Wyoming

_____/s/ *James R. Cuthbertson*___ 6/9/2018

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NONE

SUMMARY

- The project area has varied landforms and vegetation. There are distinctive areas such as the Snowy Range. Most of the project area is more common with expanses of uniform terrain and vegetation. There are localized variations of terrain and vegetation that provide for visual variety and interest. Portions of the landscape have been heavily managed in the past. The insect epidemics in the conifers and the diseases in aspen have created a heavily impacted landscape, thus, affecting scenic attractiveness. Nearly the entire project area has been affected by mountain pine beetle, spruce bark beetle, or aspen decline to some degree. Areas of previous management are sometimes contain the only remaining green trees.

- Analysis methods and models used: The analysis of effects is based on the Landscape Aesthetics Handbook and the 2003 Medicine Bow National Forest Land and Resource Management Plan (Forest Plan). Design Features are incorporated into the project to ensure that implementation will yield results that are consistent with the Forest Plan. The range of potential treatments were evaluated for their effects on scenery and consistency with Forest Plan Scenic Integrity Objectives.

- No Action Alternative Summary of Effects: Most standing dead and dying trees would fall and therefore remain a hazard to forest users and travelers until removed or blown down. In certain areas, visitors would notice high numbers of downed trees in or near travel corridors and recreation areas, which would negatively impact scenic quality. Scenic quality would remain degraded for many years as accumulations of fallen dead trees increase causing the landscape to appear unhealthy. Stands will gradually begin to regenerate, which will improve scenic quality over a long period of time. Without treatment, Scenic Byways and the Continental Divide National Scenic Trail will remain less scenic for a longer period of time, similar to the rest of the forest with the No Action Alternative. The cumulative effect of this alternative is that over-time scenery on the forest will recover on its own as the effects of dead trees diminish and new stands grow.

- Proposed Action Summary of Effects: The direct effect of the Proposed Action on scenic quality would be that, in green-tree treated areas, forest visitors would notice the removal of mature trees that once dominated the forest landscape. The immediate visual impact from treatments may be negative, depending on the value of the observer for more or less dense stand settings. Openings resulting from removal of live and diseased trees of various sizes and shapes would be noticed by visitors traveling along road and trail corridors and from viewing points. The immediate visual impact from treatments in areas of mortality may be positive, as the removal of dead and dying trees may be considered an improvement upon the status quo. Fewer large stands of dead trees would be visible from travelways, potentially improving scenic quality.

- Negative short-term impacts on scenic resources would occur from temporary roads and along existing corridors from mechanical management activities. In the short-term, mechanical treatments would be more apparent to visitors traveling through active work areas. Some felled trees would remain on the ground to protect sensitive plants, hydric soils and wildlife habitat in identified sites. Some sections of trail corridors would have large amounts of felled trees visible on the ground by trail users, which could negatively impact scenery. Some trees would remain to provide present and future shade and screening. Some recreation and administrative sites may become more visible due to removal of screening trees.

- Debris from treatment activities, typically root wads from temporary road construction and slash from harvesting or thinning has a negative effect on scenery. Design features to minimize this impact in the foreground and immediate foreground will reduce the amount and duration of that impact.

- Scenic quality along Scenic Byways and the Continental Divide National Scenic Trail is likely to improve more rapidly following treatment that removed dead trees in the foreground and stands are regenerated more quickly. In the short term, impacts from treatment operations will be noticeable, but will be designed to intrude as minimally as possible in the foreground and debris cleanup will minimize the distracting elements in the landscape. There will be interference with use of the trail during treatment activities. There is not a substantial interference with the nature and purposes of the trail.

- Cumulative Effects from activities under the proposed action: Over time, provide better scenic quality will be provided by removing dead material. The enhanced regeneration of the forests will provide for better scenic experiences. Treatments of the regeneration will provide for better growing conditions and a healthier and more pleasing forest appearance. With the design features that are employed, the forest will meet the desired scenic conditions expressed the forest plan over time.

- Compliance with Regulatory Direction: The no action alternative will not meet desired conditions for high quality scenery on the Forest. Scenery that has been adversely impacted from the perspective of most observers, so for that reason, the no action alternative will maintain a sub-optimal situation.
  The proposed action will improve scenic quality to some degree by treating dead trees and enhancing regeneration of the forest which will be more appealing to most observers, thus meeting the desired conditions from the Forest Plan. The proposed activities and the design features will meet the standards and guidelines from the Forest Plan. Requirements from Forest Service Directives are complied with. Specifically, direction for the Continental Divide National Scenic Trail are complied with.

REGULATORY FRAMEWORK

Directly relevant Forest Service Manual Direction and Forest Plan Direction are presented below. Forest Service Direction is from Forest Service Manual (FSM).

Forest Service Direction

FSM 2380.3 - Policy (Landscape Management Chapter - 2380)

It is Forest Service policy to:

4. Apply scenery management principles routinely in all National Forest System activities.

FSM 2380.31 - Resource Planning and Management

1. Use the basic concepts, elements, principles, and variables defined in the National Forest Landscape Management Agriculture Handbook (AH) series to manage landscape aesthetics and scenery (see FSM 2380.6 for a full listing of the AH publications in this series).

2. Document assessments of project impacts on scenery values, proposed mitigation measures, and scenic integrity objectives. Monitor the effectiveness of mitigation measures and the achievement of objectives.

FSM 2353.44b - Continental Divide National Scenic Trail (CDNST)

7. Use the Scenery Management System (FSM 2382.1; Landscape Aesthetics:

A Handbook for Scenery Management, Agricultural Handbook 701, 1995, http://www.fs.fed.us/cdt) in developing CDNST unit plans and managing scenery along the CDNST. The one-half mile foreground viewed from either side of the CDNST travel route must be a primary consideration in delineating the boundary of a CDNST management area (para. 2b). The CDNST is a concern level 1 route (Landscape Aesthetics, page 4-8), with a scenic integrity objective of high or very high, depending on the trail segment (Landscape Aesthetics, page 2-4).

Forest Plan Direction

Forest Plan direction is summarized in Table 1, which follows. Management Area direction that applies to scenery is presented for management areas that could have treatments applied and is shown in Table 2. Geographic Area direction did not provide standards or guidelines for scenery.

Table 1. Forestwide Direction for Scenery Management

Component	Forest Plan Direction	Application
Standard	1. Apply the Scenery Management System (SMS) to all NFS lands, Travel routes, use areas, and water bodies determined to be of primary importance are concern level 1 and appropriate scenic integrity objectives are established according to the SMS.	Scenic Integrity Objectives (SIOs) will be the lower of High or 1 step greater than the overall SIO established for the Management Area in the foreground of Scenic Byways, Recreation Sites and water features identified in Appendix I, Table 2 of the 2003 Revised Medicine Bow Land and Resource Management Plan.
Standard	2. Meet the scenic integrity objective of Moderate within the foreground for all National Scenic and Recreation Trails	Policy established subsequent to the Forest Plan decision declares that the Continental Divide National Scenic Trail is concern level 1 and the SIO is High for the corridor.
Guideline	1. When rehabilitating projects and areas that don't meet scenic integrity objectives specified for each management area prescription, consider the following when setting priorities for rehabilitation: a. Relative importance of the area and the amount of deviation from the scenic integrity objectives. b. Length of time it will take natural processes to reduce the scenic impacts so they meet the scenic integrity objective. c. Length of time it will take rehabilitation measures to meet the scenic integrity objective. d. Benefits to other resource management objectives to accomplish rehabilitation.	Projects in areas of greater than 30% mortality will be considered "rehabilitating" projects. Project prioritization and design features will follow the direction in this guideline.
Guideline	2. Meet the scenic integrity objectives of High and Moderate within 1 year after completion of a project. Meet the scenic integrity objective of Low within 3 years after project completion.	Rehabilitation Projects will strive to meet this requirement, especially in the foreground of concern level 1 locations. Green Tree projects will follow this guidance.

Table 2. Management Area Direction for Scenery Management

The SIO for Concern Level 1 routes and locations shown in this table was derived based on the Forestwide Standard for Scenery and patterned off of Management Area 5.13 as the Forestwide Standard was applied there. The process is described later in this document.

Management Area	Component	Management Area Direction	Concern Level 1 SIO, derived from Forestwide Standard
1.31	**Guideline**	SIO = High	High
1.33	**Guideline**	SIO = High	High
1.5	**Guideline**	SIO = High	High
2.1	**Guideline**	SIO = High	High
2.2	**Guideline**	SIO = High	High
3.31	**Guideline**	SIO = Moderate	High
3.3	**Guideline**	SIO = Moderate	High
3.4	**Guideline**	SIO = Moderate	High
3.5	**Guideline**	SIO = Moderate	High
3.54	**Guideline**	SIO = High	High
3.56	**Guideline**	SIO = Moderate	High
3.58	**Guideline**	SIO = Moderate	High
4.2	**Desired Condition**	The landscape will have a predominantly natural appearance and be relatively undisturbed or slightly disturbed by human activity. Vegetation management will enhance the scenic resource and blend with the natural landscape.	
4.2	**Guideline**	SIO = Moderate	High
4.3	**Desired Condition**	Dispersed recreation areas are managed to provide undeveloped recreation opportunities in landscapes that are natural or have a natural appearance.	
4.3	**Guideline**	SIO = Moderate	High
5.12	**Guideline**	SIO = Low	Moderate
5.13	**Guideline**	SIO = Low	Refer to Established Guideline for this Management Area

Management Area	Component	Management Area Direction	Concern Level 1 SIO, derived from Forestwide Standard
		Meet or Exceed SIO of Moderate in foreground of arterial/collector roads and primary trails. Design individual harvest units to minimize edge contrast	
5.15	**Guideline**	SIO = Low Meet or Exceed SIO of Moderate in foreground of arterial/collector roads and primary trails.	Refer to Established Guideline for this Management Area
5.41	**Guideline**	SIO = Moderate	High
5.42	**Guideline**	SIO = Moderate	High
7.1	**Guideline**	No SIO Stated.	This setting is a developed setting. Much of the area will be in the foreground of concern level 1 viewing points, so the applied SIO should be high for vegetation treatments.
8.21	**Desired Condition**	These areas contain developed recreation sites that provide an array of recreational opportunities and experiences in a forested environment. These areas also include the surrounding terrain, resulting in an attractive setting for the developments.	
8.21	**Guideline**	SIO = Low	Moderate Vegetation Treatments should meet as high of an SIO as possible in these concern level 1 locations.
8.22	**Desired Condition**	Ski runs will be designed to blend and harmonize with the natural terrain. Recreation facilities, such as buildings, lifts, and groomed trails, will be evident. At the base development, services and facilities will be designed	

Management Area	Component	Management Area Direction	Concern Level 1 SIO, derived from Forestwide Standard
		to complement the overall forest setting and will serve the needs of forest visitors.	
8.22	**Guideline**	SIO = Low	Moderate Vegetation Treatments should meet as high of an SIO as possible in these concern level 1 locations.
8.3	**Desired Condition**	Human development will be obvious and may dominate foreground views.	
8.3	**Guideline**	No SIO Stated. Prepare vegetation management plans for all utility corridors to minimize scenic impacts and plan rehabilitation of existing	
8.6	**Desired Condition**	Landscape modifications and facilities may be visible, but are reasonably mitigated to blend and harmonize with natural features. Vegetation will be managed to provide a pleasing appearance for visitors.	
8.6	**Guideline**	SIO = Low	Moderate Vegetation Treatments should meet as high of an SIO as possible in these concern level 1 locations.

One Management Area is devoted to scenery specifically. The entire set of Management Area direction is shown here:

4.2 Scenery

Theme – Areas are managed for scenic values and recreation uses of designated scenic byways and other heavily used scenic travel corridors.

Setting – These areas occur where outstanding scenic features draw attention and use. They are scenic byways, high quality scenic areas, and/or vistas noted for outstanding physical features. They include transportation corridors such as highways or Forest roads.

Desired Condition – The landscape will provide high-quality scenery, while allowing multiple use management such as timber harvest, wildlife management, recreation activities, mineral extraction, and livestock grazing to occur. Many of these uses and their interactions will maintain the scenic beauty for which the area is designated.

The landscape will have a predominantly natural appearance and be relatively undisturbed or slightly disturbed by human activity. Vegetation management will enhance the scenic resource and blend with the natural landscape. Fire will influence landscape vegetation patterns according to site-specific objectives. Insect and disease outbreaks will generally be allowed to influence forest vegetation unless the scenic resource is threatened. Rangeland vegetation will occur in a mix of seral stages, but will predominantly be in mid seral to late seral stages of development. Travelways will be clearly marked and maintained to facilitate large numbers of visitors. Recreation facilities may include scenic overlooks, interpretive signing, and rest areas; however, all management activities will be designed to blend and harmonize with the natural environment. Developed campgrounds will be screened from the main travelway. Opportunities to view wildlife will be encouraged, but may be limited to those species that are common and/or accustomed to the presence of people. Habitat for sensitive species may be enhanced where opportunities exist, but the focus will be on protection and maintenance. Interpretation will emphasize habitat types. Some roads or portions of roads will be closed seasonally for protection of the road surface or to protect critical wildlife habitat.

Standards and Guidelines

Fire and Fuels

Guideline 1. Use direct control, perimeter control, or prescription control as the wildland fire management strategy.

Infrastructure

Guidelines 1. Locate new facilities off the main travelway. Design them to be unobtrusive.

2. Construct and maintain facilities to support recreation activities, which meet the ROS class for the area.

Integrated Pest Management

Guideline 1. Focus pest management activities and methods on enhancing or protecting the scenic quality of the area.

Minerals

Guideline 1. Allow oil and gas leasing; however, activities may be located to meet scenic integrity objectives.

Recreation

Guideline 1. Manage for a year-round ROS class of Roaded Natural or Rural, as mapped.

Scenery

Guideline 1. Meet the scenic integrity objective of Moderate.

Transportation

Guideline 1. Design proposed roads and trails to blend with the landscape.

Vegetation

Standard 1. Use only vegetation management practices necessary to meet specific resource objectives other than wood production. Timber harvest is not scheduled and does not contribute to the allowable sale quantity.

Wildlife

Guideline 1. Encourage habitat improvement projects that increase opportunities for wildlife viewing, habitat management, and interpretation, fishing, and hunting

ANALYSIS METHODOLOGY

The analysis area where treatments can occur is extensive. Treatments can occur on slightly more than 1/3rd of the analysis area. For these reasons, a broad scale review of potential treatments and direction was conducted. The review consisted of examining treatment information for the project in the project GIS files which also contained Forest Plan direction information. Treatment descriptions from Silviculture and Fuels specialist reports were used to assess effects of identified treatments.

Quantitative analysis of treatment location and acreages were not possible. Therefore, the analysis was written in qualitative terms. This analysis of the affected environment and effects will describe potential effects to scenery from treatments. The effects of treatments are based on application the Scenery Design Feature by persons knowledgeable with scenery management principles.

The analysis of effects for the proposed action is based on the Landscape Aesthetics Handbook and the 2003 Medicine Bow National Forest Land and Resource Management Plan (Forest Plan). The Scenery Design Feature is incorporated into the project to ensure that implementation will yield results that are consistent with the Forest Plan. Information about activities in the Treatment Opportunity Areas was gathered from this document and from information contained in the project GIS file. The range of potential treatments were evaluated for their effects on scenery and for consistency with Forest Plan Scenic Integrity Objectives. Given the large scale plan area, a wide variety of existing scenic conditions and that individual treatment decisions will be made, the effects analysis will be presented with general descriptions of effects.

Components of Scenery Analysis are described here to serve as reference for later discussions in this document. Scenery Analysis is about perceptions of observers about the landscape they are viewing. In this case, the analysis will look at a landscape that has been modified by natural processes and partially modified by previous treatments.

When people are viewing the landscape in the National Forest, they are typically viewing it from a road, trail or viewing point. Viewing points can be locations along a road or a trail where people are traveling or where they stop for a view or they may be at facilities within or external to the forest. The impact of the landscape being observed varies with the distance from the viewer. These distance zones are described in Table 3.

Table 3.Distance Zones and Description

Zone	Distance from viewer	Description
Immediate Foreground	0 – 300 feet	At an immediate foreground distance, individual leaves, flowers, twigs, bark texture can be distinguished. Texture is made up of individual leaves, needle clusters, and bark/twig patterns. Details are important.
Foreground	300 feet to one-half mile	At foreground distances, small boughs of leaf clusters, tree trunks, large branches, individual shrubs, and clumps of wildflowers can be distinguished. Texture is made up of those characteristics. Individual forms are dominant.
Middleground	One-half mile to 4 miles	This is the predominant distance zone that landscapes are seen on the National Forest. At middlegroung distance, individual tree forms, large boulders, flower fields, small openings, and rock forms can still be distinguished. Form, texture and color are dominant and pattern is important. Texture is made up of tree forms. Steep topography can highlight deviations in the landscape.
Background	4 miles and greater	At background distance, stands of trees, large openings and large rock outcrops can be distinguished. Texture has disappeared and flattened. Large patterns of vegetation or geology are still distinguishable. Landform ridgelines are the dominant visual characteristic.

The appearance of management activities and the effect on observers is strongly influenced by distance. As distance increases, activities of the same scale become less apparent. At closer distances, activities are more apparent.

Observers have a range of concerns for the quality of scenery in the forest. In places where most observers are concerned with scenery, those locations are considered to be Concern Level 1. From Forest Plan direction and the Forest Service Manual, Concern Level 1 occurs on Scenic Byways, the Continental Divide National Scenic Trail, from recreation use sites and water bodies that were identified in Appendix I of the Forest Plan.

The impact of management activities on an observers perceptions vary with a number of factors. Kearney and Bradley reported “In the context of forests, people tend to prefer scenes that are more “natural” in appearance, without signs of harvesting or intensive management, such as bare ground, downed wood or slash, or openings that appear to have been created by harvesting. Higher preference has also been associated with a higher number of mature trees, more vegetative ground cover, increased variation in tree and other plant species, and lower density (i.e., an increased ability to “see into” the scene)”. The conclusion in terms of treatment type and extent for most observers is that less removal, smaller cleared areas and removal of debris are preferred. Over time, as treated areas recover, the preferences for the scenery at a location will increase.

While that conclusion indicates a general trend of preference increasing with less disturbance, people have different starting places concerning acceptability of managed scenes. Kearney and Bradley report the following: “Ribe’s (2002) study of the relationships among attitudes, preference, and acceptability found that study participants who favored resource protection, as compared to those who favored resource production, had higher standards for both scenic beauty and for acceptability and only perceived scenes as acceptable if they were also beautiful. In contrast, participants who favored resource production had lower standards for both scenic beauty and acceptability and perceived some scenes rated low in scenic beauty as acceptable. Nonaligned participants judged the two qualities similarly.” These preferences two are factored into the design and activities associated with the treatment.

The Forest Service uses the term “scenic integrity” to describe differences in landscape character from what that landscape would look like without human intervention. The classification system for scenic integrity describes relative amounts of deviation, or levels of deviation, from the state of naturalness. The current conditions are called Existing Scenic Integrity (ESI). The same nomenclature for scenic integrity is used to describe the desired level of scenic integrity. Desired scenery conditions are termed Scenic Integrity Objectives (SIO) and are stated in the Forest Plan as guidelines. Using scenery design concepts and applying them to the landscape with guidance from the SIO, is how preferences for scenic quality are factored into treatments. SIO’s should be considered minimum acceptable levels of scenic Integrity. The complete description of the Forest Service system for scenery is contained in Agriculture Handbook Number 701 – Landscape Aesthetics, A Handbook for Scenery Management and related documents.

Scenic integrity descriptions are shown in Table 4. These terms are used to describe both Existing Scenic Integrity and Scenic Integrity Objectives. Existing Scenic Integrity describes how the area appears at this point in time, relative to an unaltered landscape. Scenic Integrity Objectives refer to the future desired appearance of the landscape, relative to an unaltered landscape.

Table 4. Scenic Integrity Descriptions

Scenic Integrity Level	Adjective Term	Description
Very High	Unaltered	Landscape Character is intact with only minute if any deviations

High	Appears Unaltered	Landscape Character "appears" intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.
Moderate	Slightly Altered	Landscape Character "appears slightly altered". Noticeable deviations must remain visually subordinate to the landscape character being viewed. Form, line, color, texture, and pattern common to the landscape character are at such scale that they are slightly evident.
Low	Altered	Landscape Character "appears altered". Deviations begin to dominate, but they borrow attributes such as size, shape, edge effect and pattern of natural openings, or vegetative type changes.
Very Low	Heavily Altered	Landscape Character "appears heavily altered". Deviations may strongly dominate the landscape.
Unacceptable	Extremely Altered	The landscape appears extremely altered and are extremely dominant. This is only used to describe Existing Scenic Integrity and is not used as a Scenic Integrity Objective.

Scenic Integrity Objectives are shown in Table 1 and Table 2. The standard in Table 1 states that for Concern Level 1 locations, SMS (Scenery Management System) will be used to determine the appropriate SIO for those situations. The Management Area SIO is increased one level for areas visible in the foreground of Concern Level 1 locations. For instance, a Management Area with a Moderate SIO guideline will have a High SIO guideline in Concern Level 1 foregrounds. By policy, the CDNST will have a SIO standard of High.

Taken together, Distance Zones and Scenic Integrity Objectives form the basis for the discussion of effects in this landscape and its character.

Treatments identified in the Silviculture Specialist Report were categorized based on similarity of treatment and effects, called Scenery Effects Scenario. Analysis of effects were based on the Scenery Effects Scenario, the treatment, and application of the Design Feature.

Direct, Indirect and Cumulative effects were identified based on common literature and experience as applied to the potential range and magnitude of treatments.

AFFECTED ENVIRONMENT

The affected environment for the project area is described in other specialist reports. In particular, vegetation is well described in the Silviculture Specialist Report. The affected environment discussion

regarding scenery is presented here. Information about existing conditions presented in this section come from the Silviculture Report.

For this project, a large portion of the treatments will occur on lands adversely affected by insects compared to the landscape character normally observed. Normal landscape character would have areas of insect and disease or other disturbance factors such as fire or wind that are evident. Generally those areas would be relatively small. In this case, the insect epidemic has vastly exceeded the typical scale of disturbance. While it is true that large scale disturbances occur in this landscape, those disturbances are not typically apparent on the landscape for the long return intervals between disturbance events. Existing Scenic Integrity typically looks at purposeful human induced change to the landscape. It is not well suited to describe landscapes that have had large scale disturbance events. The insect epidemics in the conifers and the diseases in aspen have created a heavily impacted landscape, in nearly the entire area, in terms of vegetation condition, and thus, scenic attractiveness. Areas of previous management are sometimes contain the only remaining green trees. For purposes of these discussions, disturbed landscapes do not currently meet Scenic Integrity Objectives, in the eyes of most observers.

There is incomplete information about treatments of timber prior to 1960. It is known that timber has been harvested from the area since the late 1800's, primarily larger trees, for railroad ties and telegraph poles. Since 1960, about 113,000 acres have had some type of timber management treatment. Just under half of this has been using clearcutting. There are numerous roads through the area, presumably to support timber harvest or other resource management activities. The result of this is the appearance of a fairly heavily managed landscape in places and much less so in other places.

The project area and planned treatments have been organized into 3 categories which reflect degrees of impact from insect damage or disturbance:

A. areas where more than half of the trees have died,
B. areas where about one-third to one half of the trees have died,
C. areas with less than one-third mortality for trees.

Areas with more than one-half of trees having died, likely do not have many remaining live trees, especially in the overstory. These areas will have a grey color at this time. Trees may be falling over or may still be standing for awhile longer. The appearance is that of an unhealthy forest to most observers.

Areas with one-third to one-half of the trees having died will retain some green appearance, but will have noticeable amounts of dead trees, such that the forest does not appear very healthy. Trees may be falling over or may still be standing for a while longer. Removal of dead overstory may be followed with treatment of the residual stand.

Areas with less than one-third of the trees having perished are likely to be younger stands or have a variety of species present. These stands will largely appear intact if there have not been treatments or there will be noticeable areas where previous timber operations have created younger stands. Older stands in this category may be treated to regenerate a new stand. Stands that are middle aged or younger may be treated to improve growing conditions.

Advance regeneration of trees has been found, in a variety of micro-climates in the project area, after the mountain pine beetle infestation (Kayes and Tinker, 2010). This suggests that there may be opportunities to utilize advance regeneration to screen or to populate areas that are being treated to remove dead trees. The desirability of retaining advanced regeneration for scenery will need to be balanced against the composition of that regeneration and the health of that regeneration.

Each of the categories of disturbance have a different appearance which affects how the areas will appear in the future, both without or with treatment. Different species have variations of appearance within each of those categories. The species will respond somewhat differently with or without treatment.

Aspen stands usually have understory vegetation of grasses, forbs and shrubs. Sometimes there will be an understory of your aspen or individuals and clumps of conifers of various ages. Areas of higher mortality will usually retain a vegetated appearance, although there may not be a strong presence of trees. Areas of lesser mortality will typically have a stronger presence of living trees.

Lodgepole pine stands have a wide variation of stand characteristics. Stand may be a single story of pure lodgepole with little understory vegetation or there may be varying amounts of understory vegetation. Lodgepole stands may have mixed ages of lodgepole or may contain differing species in a varied of combinations. The different levels of mortality affect the appearance of these stands very differently.

Spruce and Fir stands are typically multi-storied over space, but may have single story characteristics in places. Frequently there is advance regeneration in these stands. Due to the more moist climate, other growth types may be in the understory. With insect disturbance, a range of appearance exists. Some places all ages of trees may be affected, in others the impact may be on older/larger trees alone. The amount of remaining living vegetation will vary.

A large acreage of the tree types described above have been treated previously. Some stands are young to almost middle-aged regeneration, especially in lodgepole pine. Others are in the process of being regenerated or have had some types of more selective treatment. So, in addition to insects or other disturbances, there is evidence of management that is apparent. Some areas of older management activity have straight line edges at the treated area. Those edges and the size of treatments in respect to the surrounding area may not meet the current SIO's for that area.

Along the Continental Divide National Scenic Trail, there is considerable mortality and there are locations with residual living trees. The insect disturbance has changed the scenic character of the experience of

hiking along the trail from what it once was. There has also been previous active management of trees in places along the trail.

ENVIRONMENTAL CONSEQUENCES

Project Design Features

SCENIC RESOURCES **OBJECTIVE:** To provide high-quality scenery while allowing multiple-use management to occur.	
#1	In all treatment areas, follow General Direction and associated standards and guidelines in the Visual Resource Management Section of the 2003 Land and Resource Management plan. This direction is found on Forest Plan pages 2-52 to 2-53.
#2	Along Scenic Byways, burned slash piles will be rehabilitated, it needed, within four years of the activity to eliminate the appearance of uncharacteristic disturbance.

Alternative 1 - No Action

Under Alternative 1, the No Action Alternative, no management treatments would occur.

Direct Effects – No Action

Since there are no management actions, there are no direct effects from management activities. Limited activities to deal with situations that arise will occur and visitors to the forest will modify their activities that could have some effect.

Most standing dead and dying trees will fall and therefore remain a hazard to forest users and travelers until removed or blown down. Strong winds could blow down dead and dying tree across trails, roads, campsites, trailhead parking areas and administrative sites. Trees falling across roads or trails would be cut to open access, but would not be removed. There would be evidence of cut-ends of logs, which would have a small effect on scenic quality.

Visitors could impact the immediate foreground of scenic resources by creating new paths around roads or trails blocked by naturally fallen trees that have not yet been removed. Impacts could include eroded or bare soils; trampled or removed ground-level vegetation along created paths; and damage to young healthy trees

Indirect Effects – No Action

The effects of no action will mostly be indirect, in that natural processes will continue and the scenery will change based on those processes. The forest will continue to recover at a natural pace. The presence of standing and eventually of fallen trees will detract from the natural appearance of the landscape for most observers. Recovery in conifer stands would continue slowly. It is predicted that large fires may result due to fuel loadings which would affect scenic quality for mid-to-long term.

In certain areas, visitors would notice high numbers of downed trees in or near travel corridors and recreation areas, which would negatively impact scenic quality.

Cultural activities to regenerate new stands or to manage existing stands (young or approaching maturity) will not occur. There would not be visual impacts from activities. Indirectly, the opportunity to improve the appearance of those stands, especially stands which do not meet the desired scenic integrity, would be foregone.

Scenic Byways and the Continental Divide National Scenic Trail are key features in the project area. As with other discussions of the No Action alternative, the effects in these will be similar, the difference is that with these special designations, there is higher expectation for scenic quality. Without treatment, these areas will have lower scenic quality similar to the rest of the forest with the No Action alternative.

Cumulative Effects – No Action

Scenic quality would remain degraded for many years as accumulations of fallen dead trees increase causing the landscape to appear unhealthy. Stands will gradually begin to regenerate, which will improve scenic quality over a long period of time. The character of stands may change with changes in species. It is possible that aspen will continue to decline and become absent from the landscape, which would reduce a visual element that most people find pleasing, especially in contrast to conifer stands.

Past management actions created younger stands for the most part. As a result, those stands were not as affected by mountain pine beetle or other insects. Because of that, there are areas that remain green and vibrant on the landscape, although this is a small portion of the landscape. The cumulative effects of no further action will be the slow recovery of stands and continued aging of existing stands. Growing conditions may not be optimal, so stagnation could occur and eventually another event, insects or fire will occur and portions of the area will begin anew.

Scenic quality will change with time. The expectation is that the impacted landscapes will remain for the long term such that scenic quality will be diminished compared to what has been present in the recent past.

Alternative 2 - Proposed Action

The proposed action would treat up to one-third of the project area to reduce the presence of dead trees in order to promote regeneration of the forest and would treat areas with younger growth to enhance growing conditions. Most of the projects would occur in areas designated for timber production, although projects can occur in areas with other designations.

Application of Forest Plan Standards and Guidelines to meet Scenic Integrity Objectives will meet the requirements of law, regulation and policy. There will be effects to scenery, which are discussed below, but these effects will be within the range contemplated in the Forest Plan. To meet Scenic Integrity Objectives, the size, shape, pattern, visibility and clean-up of debris from activities need to be considered, along with other resource management concerns.

It is important to realize that for much of the area, the existing scenic quality has been diminished due to insects and disease. In other places, previous management has occurred, which altered scenic conditions prior to adoption of the Forest Plan and the current Scenic Integrity Objectives. Thus, the existing scenic condition may not meet current Scenic Integrity Objectives. There may be a temporary reduction of Existing Scenic Integrity with some treatments. In the long term, the treatments are designed to meet Scenic Integrity Objectives.

Direct Effects – Proposed Action

Direct effects of the proposed treatments are summarized here. More specific descriptions of effects are presented later in this section.

The direct effect of the Proposed Action on scenic quality in green-tree treated areas, forest visitors would notice the removal of mature trees that once dominated the forest landscape. The immediate visual impact from treatments may be negative, depending on the values of the observer for more or less dense stand settings. Openings resulting from removal of live and diseased trees of various sizes and shapes would be noticed by visitors traveling along road and trail corridors and from viewing points. The immediate visual impact from treatments in areas of mortality may be positive, as the removal of dead and dying trees may be considered an improvement upon existing situation. Fewer large stands of dead trees would be visible from travelways, potentially improving scenic quality.

Negative short-term impacts on scenic resources would occur from temporary roads and along existing corridors from mechanical management activities. In the short-term, mechanical treatments would be more apparent to visitors traveling through active work areas. Felled trees and slash would remain on the ground to protect sensitive plants, soils and wildlife habitat at some sites. Some sections of trail corridors would have large amounts of felled trees visible by trail users, which could negatively impact scenery. Some trees would

remain to provide present and future shade and screening. Some recreation and administrative sites may become more visible due to removal of screening trees.

Removing dead and diseased trees in affected spruce-fir stands would allow existing advanced regeneration to grow faster with less competition for light and moisture, which would improve scenic quality over the long-term.

Debris from treatment activities, typically root wads from temporary road construction and slash from harvesting or thinning has a negative effect on scenery. Clean-up in the immediate foreground will reduce the intensity and duration of that impact.

Actions taken to rehabilitate areas that were previously cut in linear geometric shapes will be blended to the extent possible in an attempt to reduce the adverse visual impact. This may help improve the scenic quality of the affected areas.

Scenic Byways and the Continental Divide National Scenic Trail are key features in the project area. The expectation for higher scenic quality in these areas is more likely to be met with the proposed treatments. The removal of dead trees will enhance views for most observers. Treatments will be designed to intrude as minimally as possible in the foreground and debris cleanup will minimize the distracting elements in the landscape. For most viewers, enhanced improvement of the foreground and middleground scenery will provide a better experience. The proposed actions will not substantially interfere with the nature of the trail over the long term, nor will they interfere with uses (purposes of) on the trail. The appearance of the trail corridor has been altered by the insect epidemic. Efforts to restore vegetation will impact scenic quality and the experience on the trail while activities are occurring and while vegetation recovers.

Table 5 shows the treatment type and the Scenic Effects Scenario. The Scenic Effects Scenarios and the direct effects are described below the table. The Scenarios are aggregations of similar treatments to make it easier to present the analysis.

Table 5. Treatment Type and Scenery Effects Scenario

Adaptive Mgmt. Treatment Option	**Tree Cover Type Application**	**% Overstory Removal**	**Current Mortality**	**Scenery Effects Scenario**
Stand Initiation				
Clearcut	Lodgepole, Ponderosa, Mixed Conifer	Up to 100%	50-100%	SES-3
Coppice	Aspen	Up to 100%	50-100%	SES-1

Stand Replacing Prescribed Fire	Lodgepole, Ponderosa, Mixed Conifer, Aspen	Up to 100%	50-100%	SES-12
Final shelterwood Removal	All	Up to 100%	50-100%	SES-6
Seed tree cut (prep)	Lodgepole, Ponderosa, Mixed conifer	Up to 100%	50-100%	SES-4
Overstory removal	All	Up to 100%	50-100%	SES-6
Two-aged clearcut	Lodgepole, Ponderosa, Mixed Conifer	Up to 90%	50-100%	SES-4
Two-aged coppice cut	Aspen	Up to 90%	50-100%	SES-2
Shelterwood/Intermediate/ Uneven-aged				
Shelterwood prep cut	All	Up to 40%	30-49%	SES-5
Shelterwood establishment cut	All	Up to 80%	30-49%	SES-4
Thinning	All	varies	30-49%	SES-11
Sanitation	All	varies	30-49%	SES-9
Salvage	All	varies	30-49%	SES-9
Improvement cut	All	<30%	30-49%	SES-9
Liberation cut	All	Up to 100%	30-49%	SES-9
Release and weed	All	<30%	30-49%	SES-11
Non-stand replacing prescribed fire	All	<30%	30-49%	SES-13
Group selection	All	100% in groups	30-49%	SES-7
Single tree selection	All	<30%	30-49%	SES-8
Adaptive Mgmt. Treatment Option	**Tree Cover type Application**	**% Overstory Removal**	**Current Mortality**	**Scenery Effects Scenario**
Green tree/Shrub land and Grassland				
Conifer removal (from aspen, shrub land or meadows)	Aspen	Varies	n/a	SES-10
Mountain shrub and sage brush treatment	N/A	n/a	n/a	SES-15
Grass and forb treatment	N/A	n/a	n/a	SES-14
Coppice cut	Aspen	Up to 100%	<30%	SES-1
Two age Coppice cut	Aspen	Up to 90%	<30%	SES-2
Shelterwood prep cut	All	Up to 40%	<30%	SES-5
Shelterwood establishment cut	All	Up to 80%	<30%	SES-4

Thinning	All	varies	< 30%	SES-11
Sanitation	All	varies	< 30%	SES-9
Salvage	All	varies	< 30%	SES-9
Improvement cut	All	<30%	< 30%	SES-9
Liberation cut	All	Up to 100%	< 30%	SES-9
Release and weed	All	<30%	< 30%	SES-11
Non-stand replacing prescribed fire	All	<30%	< 30%	SES-13
Group selection	All	100% in groups	< 30%	SES-7
Single tree selection	All	<30%	< 30%	SES-8

SES-1. Scenario #1 treatments clear aspen in either areas of mortality or in green tree areas with the objective of regenerating a new stand. There may or may not be an understory of shrubs or grasses and forbs. This treatment will create a cleared area, residual trees are not expected to remain in the treatment unit. The unit may or may not have other vegetation to soften the appearance. Depending upon the clean-up strategy, there will be varying amounts of debris left on site. It is expected that scenic recovery of vegetation with this treatment will be fairly rapid.

SES-2. Scenario #2 is regeneration of aspen in either areas of mortality or in green tree areas to create two age classes. There may or may not be an understory of shrubs or grasses and forbs. This treatment will create a partially cleared area. For areas of high mortality, it is assumed that some residual understory/midstory remaining, in order to create a two aged stand. Residual trees would be expected to remain in the treatment unit. The unit may or may not have other vegetation to soften the appearance. Depending upon the clean-up strategy, there will be varying amounts of debris left on site. It is expected that the scenery will not be changed to a significant degree. Scenic recovery of vegetation with this treatment will be fairly rapid.

SES-3. Scenario #3 treatments involve the removal of a majority or all of the trees which are mostly dead. The result of this is an area that is typically devoid of vegetation or has a few trees remaining as seed trees. Over time, the intent is for stand regeneration. In areas of high mortality, treatment could extend over large areas. Because these areas are currently dead, the visual impact of treatments will be an improvement by cleaning areas up. The area of treatment size will not affect scenery in the long term, other than hastening regeneration in treated areas compared to untreated areas. Treatment activities will not degrade the overall view in the long term, since the impacts from insects have already changed the future view.

SES-4. Scenario #4 treatments involve the removal of trees in stands with some dead overstory along with green overstory to create a seedbed for regeneration or a removal in a manner that creates a two aged stand. The result of this is an area that has significantly reduced vegetation present. Due to subsequent treatments, design needs to consider treatment area size and shape that will result from those subsequent treatments in order to meet SIOs in the future.

SES-5. Scenario #5 treatments involve the partial removal of stands that have some mortality or may be mostly green trees. The result of this is an area that has slightly reduced vegetation present. Some regeneration may result from this treatment. This treatment type is a green tree removal, so the character of the stand is changed slightly, in preparation for more extensive cutting later on. Due to subsequent treatments, design needs to consider treatment area size and shape that will result from those subsequent treatments in order to meet SIOs in the future.

SES-6. Scenario #6 treatments primarily involve removal of trees over-topping over a young stand or relatively few individuals in more mature stands. The result of this is an area that typically has vegetation remaining. The intent is for good growing conditions of the stands. The visual impact of these treatments are likely to be low, even over large treatment units, due to the remaining vegetation. Removal of the overstory will make the edges of existing treatment units more obvious, until stand height increase to blur those edges.

SES-7. Scenario #7 is group selection treatment type. These treatments are distinguished from Scenario #1 treatments in that they are relatively small scale and occur within or at the edge existing vegetation. The visual impact of these treatments are likely to be low due to the smaller size of the units in the matrix of existing vegetation. Impact along roads, trails or fixed viewing points will could be somewhat higher. In the overall view, the density of treatments will affect perceptions of scenic impact. Small treatment unit size and unit density will be slightly noticeable, which larger unit sizes or higher unit density will be more noticeable, but would still meet the SIO.

SES-8. Scenario #8 is single-tree selection treatment type. These treatments should not result in much change to the appearance of the vegetation. Trampling of residual vegetation may occur as equipment is used to access or remove individual trees. This could result in some change to the scenery in the foreground. In the overall view, little change to scenery would be noticeable.

SES-9. Scenario #9 is a collection of treatment types, where selected individual trees are removed. These treatments should not result in much change to the appearance of the vegetation due to the residual stand. There may be instances when greater number of trees are removed which would be more noticeable. The amount of slash remaining will depend on the number of trees removed. In the overall view, in most cases, little change to scenery would be noticeable.

SES-10. Scenario #10 is conifer removal in aspen treatment type. These treatments may range from removal of few to removal of many trees. The visual impact of these treatments are likely to be low due to residual aspen stands. Heavier amounts of removal would be noticed by people familiar with the sites, but the change will not be noticed as much over time as the new scenic character becomes the expected character. Residual slash in the foreground may be visible in the near term.

SES-11. Scenario #11 is the intermediate treatment of younger stands or stand approaching maturity to remove individuals for various purposes or to control stand density. These treatments may range from removal of few to removal of many trees. The visual impact of these treatments are likely to be low due to

residual trees. Visual impact along roads, trails or fixed viewing points could be somewhat higher, especially in the near term due to slash in the immediate foreground. In the overall view, some change in the density of tree cover will be noticed in the short term, until canopies begin to close again. Existing stand boundaries will not likely change. Treatments in these areas can be designed to soften the mosaic created by previous treatments that have straight lines at the edges of the treatment boundary.

SES-12. Scenario #12 is stand replacing prescribed fire. These treatments would be noticeable in the short-term and would fade over-time. The key effect will be blackened land and vegetation. Care should be taken to not damage residual vegetation at the edges of the treatment. As vegetation re-occupies the site, the effects will be much less noticeable, except for charred wood that remains on the ground or on standing vegetation that was not completely consumed. Scorch of trees will remain for a longer period of time.

SES-13. Scenario #13 is non-stand replacing prescribed fire. These treatments would be noticeable in the short-term and would fade over-time. The key effect will be blackened land and vegetation. Care should be taken to not damage residual vegetation. As vegetation re-occupies the site, the effects will be much less noticeable, except for charred wood that remains on the ground or on standing vegetation. Scorch of trees will remain for a longer period of time.

SES-14/15. Scenario #14/15 is management of grass/forb and shrub/brush lands. Shrub and brush treatments will be noticeable in the short term and may be noticeable over a longer period of time. When viewed in proximity to untreated areas, the change in patter will be noticeable, but due to the low growth habit of this vegetation, the visual impact will not stand out. Grass and forb treatments are not likely to be noticeable in the long term, but may be noticeable in the short term due to ground disturbance. Grasses will recover quickly, with forbs requiring slightly longer time to recover. Again, due to the low growth form, these changes will not stand out.

Indirect Effects – Proposed Action

Over time, the effects of the proposed action will improve scenery from what it would be absent any treatment and scenery will improve as the results of treatment approach more natural conditions.

For Scenic Byways and the Continental Divide National Scenic Trail the indirect effects over time, will be that the current degraded condition after treatment will reach the higher desired scenic integrity objectives in a more rapid timeframe.

Cumulative Effects – Proposed Action

A large part of the project area will be treated over time and a majority of the area will not receive treatment. This will result in a variety of scenic quality across the landscape. The affected areas that are untreated will regain the typical landscape character over the long term. The project treatments will provide for better scenic quality by removing some of the large amounts of dead material currently present that is less desired

for scenic observers. The enhanced regeneration of the forests will provide for better scenic experiences more rapidly. Treatments of the existing regeneration will provide for better growing conditions and a healthier and more pleasing forest appearance. With the design features that are employed, the forest will meet the desired scenic conditions expressed in the forest plan over time.

COMPLIANCE WITH REGULATORY DIRECTION

The no action alternative will not meet desired conditions for high quality scenery on the Forest. While the no action alternative will not violate standards and guidelines for scenic integrity, the scenery has been adversely impacted from the perspective of most observers, so for that reason, the no action alternative will maintain a sub-optimal situation.

The proposed action will improve scenic quality to some degree by treating dead trees and enhancing regeneration of the forest which will be more appealing to most observers, thus meeting the desired conditions from the Forest Plan. The proposed activities and the design features will meet the standards and guidelines from the Forest Plan. Requirements from Forest Service Directives are complied with. Specifically, direction for the Continental Divide National Scenic Trail are complied with.

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